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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/807,656	03/24/2004	Ryuji Nishikawa	YKI-0145	3909

23413 7590 08/09/2006

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EXAMINER	
HU, SHOUXIANG	

ART UNIT	PAPER NUMBER
2811	

DATE MAILED: 08/09/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/807,656	NISHIKAWA, RYUJI	
	Examiner	Art Unit	
	Shouxiang Hu	2811	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *25 May 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1 and 4-21* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1 and 4-21* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

Claims 5-14 and 18-21 are objected to because of the following informalities and/or defects:

Claims 5, 9, 10 and 14 each recite the term of "each pixel", but fail to clarify what is its relationship with the "plurality of pixels" also recited in the claims.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1, 4 and 15-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tamura (US 6,410,168) in view of Lester (US 6,258,618) and/or Uemura (US 2003/0160259 A1).

Tamura discloses a light-emitting display (Figs. 1 and 3; also see cols. 5 and 6), including a plurality of pixels in a display section (such as the row of pixels under an individual row electrode 14 in Fig. 1), each pixel comprising: a transparent substrate (11); a first electrode (12; transparent; an anode) having an individual shape (see Fig. 1); a light-emitting layer (13); a second electrode (14, a cathode; a semi-transparent thin

Ag or Al layer, less than 20 nm in thickness, see cols. 5 and 6) as a common electrode for the plurality of pixels; and, an antireflective layer (21), which can be naturally regarded as a common layer since it covers the entire stripe-shaped layer 14 (see col. 6, lines 55-57).

Tamura does not expressly disclose that the semitransparent layer in the second electrode can be mesh-shaped.

However, one of ordinary skill in the art readily recognize that the crux of the Tamura invention is to reduce light reflection from the second electrode (14) by letting as much as possible the light to pass through the semitransparent electrode, and to reach and to be absorbed by the overlying antireflective layer (21); and, it is art known that more lights can pass through an second electrode that is mesh-shaped with apertures therein, as readily evidenced in the prior art such as Lester (see the apertures 18 in the second electrode layer 16 in the cover page figure) and/or Uemura (see the apertures in the second electrode layer 17 in the cover page figure).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the mesh-shaped second electrode with apertures of Lester and/or Uemura into the device of Tamura, so that an display device or an actively addressed display device with reduced adverse reflection would be obtained.

Regarding claim 4, it is noted that, one of ordinary skill in the art readily recognize that chromium oxide is also a commonly used material for the antireflective layer with desired low reflectivity, as readily evidenced in the prior art such as Koo (Koo

et al., US 2003/0117059; see [0019]). It would have been obvious to one of ordinary skill in the art to form the antireflective layer with the chromium oxide, as it is an art-known material that is well suited for the intended use. The selection of a known material based on its suitability for its intended use supported a prima facie obviousness determination in *Sinclair & Carroll Co. v. Interchemical Corp.*, 325 U.S. 327, 65 USPQ 297 (1945).

Claims 5, 7-10, 12-14 and 18-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Koo (Koo et al., US 2003/0117059) in view of Tamura (US 6,410,168).

Koo discloses a light emitting display (Figs. 2-4) which includes a plurality of pixels arranged in a matrix along a row direction and a column direction in a display section, comprising: a light emitting element (180) with a light emitting element layer provided between a first electrode (155) and a second electrode (190; cathode); thin film transistor; and an antireflective light-blocking layer (105 or 205), wherein the first electrode is provided for each of the pixels and has an individual shape, and is formed over a transparent substrate disposed on a side from which light is emitted to outside of the display and is an electrode naturally capable of transmitting light emitted from the light emitting element layer as it is formed on the front side of the light-emitting layer for the display device; the second electrode is formed of a common electrode for the plurality of pixels arranged in the matrix.

Koo does not expressly disclose that the second electrode can be formed of a semitransparent electrode underlying an antireflective layer.

However, as evidenced in Tamura (Figs. 1 and 3; also see cols. 5 and 6), the second electrode can be desirably formed of a semi-transparent electrode (14; thin Ag or Al layer, less than 20 nm in thickness, see cols. 5 and 6) underlying an antireflective layer (21) for improving display contrast by reducing adverse reflection from the second electrode (see the abstract).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to make the device of Koo with the common layer of the second electrode including a common semitransparent electrode underlying a common antireflective layer, per the teachings of Tamura, so that a display device with improved display contrast would be obtained.

Regarding claims 8, 13, 20 and 21, it is noted that, one of ordinary skill in the art readily recognize that ether molybdenum or chromium oxide is also a commonly used material for the antireflective layer with desired low reflectivity, as further evidenced in Koo ([0019]). It would have been obvious to one of ordinary skill in the art to form the antireflective layer with the molybdenum or chromium oxide, as it is a art-known material that is well suited for the intended use. The selection of a known material based on its suitability for its intended use supported a prima facie obviousness determination in *Sinclair & Carroll Co. v. Interchemical Corp.*, 325 U.S. 327, 65 USPQ 297 (1945).

Claims 1, 4, 6, 11 and 15-17 are rejected or further rejected under 35 U.S.C. 103(a) as being unpatentable over Koo (Koo et al., US 2003/0117059) in view of Tamura (US 6,410,168), and further in view of Lester (US 6,258,618) and/or Uemura (US 2003/0160259 A1).

The disclosures of Koo and Tamura are discussed as applied to claims 5, 7-10, 12-14 and 18-21 above.

Koo and Tamura do not expressly disclose that the semitransparent electrode layer can be mesh-shaped.

However, one of ordinary skill in the art readily recognize that the crux of the Tamura invention is to reduce light reflection from the second electrode (14) by letting as much as possible the light to pass through the second electrode, and to reach and to be absorbed by the overlying antireflective layer (21); and, it is art known that more lights can pass through the second electrode if it is mesh-shaped with apertures therein, as readily evidenced in the prior art such as Lester (see the apertures 18 in the second electrode layer 16 in the cover page figure) and/or Uemura (see the apertures in the second electrode layer 17 in the cover page figure).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the mesh-shaped second electrode with apertures of Lester and/or Uemura into the above device collectively taught by Koo and Tamura, so that an actively addressed display device with reduced adverse reflection would be obtained.

Response to Arguments

Applicant's arguments filed on May 04, 2006 have been fully considered but they are not persuasive.

Regarding applicant's arguments about the rejections on claims 1, 4, 15 (which is not mentioned but should also be grouped together with claim 1 in the arguments), 16 and 17, in response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). In addition, in response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988)and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992).

In this case, Tamura discloses the claimed invention, including the semi-transparent (second) electrode and the antireflective layer, except the meshed patterns in the semitransparent electrode. However, the crux of the Tamura's invention is to reduce light reflection from the second electrode (14) by letting as much as possible the light to pass through the semitransparent electrode, and to reach and to be absorbed by the overlying antireflective layer (21). And, Lester and/or Uemura are/is cited to show

that it is art known that more lights generated from a light-emitting layer can readily pass through the overlying second electrode if it is mesh-shaped with apertures therein, regardless whether the second electrode is at the front or at the back of the light-emitting layer, since Tamura already discloses that the lights, which are generated from the light emitting layer and passes through the semitransparent electrode, need to be maximally extracted from the semitransparent electrode so as to reach and to be absorbed by the overlying antireflective layer.

Therefore, it would have been well within the ordinary skill in the art to incorporate the mesh-shaped second electrode of Lester and/or Uemura into the device of Tamura, so as to form a display device with the adverse reflections from the second electrode being maximally eliminated.

Applicant's other arguments with respect to claim rejections set forth in the previous office action have also been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shouxiang Hu whose telephone number is 571-272-1654. The examiner can normally be reached on Monday through Thursday, 7:30 AM to 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eddie C. Lee can be reached on 571-272-1732. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

SH
August 4, 2006

SHOUXIANG HU
PRIMARY EXAMINER